

REMARKS/ARGUMENTS

In response to the Office Action mailed September 5, 2007, Applicant requests reconsideration. No claims are added or cancelled in this Amendment so that claims 1-6 remain pending.

Claims 2 and 5 are stated to be allowable if rewritten in independent form.

In this Amendment, a minor grammatical error occurring in both of the independent claims is corrected.

In response to the objections to the specification, two paragraphs appearing on page 18 of the patent application are modified. In the first of those paragraphs, what is clearly taught to a person of skill in the art is that some additional phase shifting element, besides capacitors like the unnumbered capacitors of Figure 1 of patent application, can be connected in parallel with those capacitors. It is apparent that such an additional energy-storing device is required if the arbitrarily chosen phase shift, referred to in that paragraph, is to be achieved. Minor amendments are made to that first paragraph on page 18 in order to explain this concept, although one of ordinary skill in the art would understand it.

With respect to the other amended paragraph on page 18, Applicant agrees that the paragraph might be considered confusing. Clearly, the Examiner understood the paragraph as intended. To remove any ambiguity, minor amendments are made to that paragraph without introducing any new matter.

Claims 1, 3, 4, and 6 have now been rejected as unpatentable over Akamatsu et al. (U.S. Patent 5,646,511, hereinafter Akamatsu) in view of Stoupis et al. (U.S. Patent 7,154,722, hereinafter Stoupis) and further in view of Wilson (U.S. Patent 5,206,775). This rejection is respectfully traversed.

Applicant agrees that the Examiner's characterization of Figure 1 of Akamatsu appearing at page 3 of the Office Action. Akamatsu is commonly assigned with the present patent application. Further, Applicant agrees that Akamatsu does not describe, as in independent claims 1 and 4, a "plurality of pairs of normally-on switches, with

each pair of switches being connected in series with corresponding ends of the primary winding of a respective array transformer.” Likewise, Akamatsu does not describe a plurality of normally-off current bypass devices, with one of each of those devices connected in parallel with the series connection of a respective primary winding and the pair of switches connected to the ends of that primary winding.

According to the Office Action, these deficiencies in Akamatsu, i.e., the differences between Akamatsu and the independent claims, are supplied by Stoupis in view of Wilson. Applicant again respectfully disagrees with this assertion.

Stoupis was cited with respect to providing an arrangement for isolating, via normally-on switches, a faulty section of a transmission line. Based upon the reference numbers mentioned at pages 3 and 4 of the Office Action, the Examiner was apparently directing attention to Figures 3A- 3C of Stoupis. The Examiner pointed out that the section of the distribution line 318 that is isolated is connected between two fault interrupters, normally-on switches 302 and 303. The difficulty with comparison of that figure of Stoupis, and the other figures of Stoupis, with the claimed invention is that, in the claimed invention, each of the primary windings of each of the array transformers has a respective pair of normally-on switches. No such arrangement is described by Stoupis.

Applicant agrees that the transformers 305 and 308 of Stoupis, respectively connected to the loads 313 and 315, have respective pairs of normally-on switches. However, transformers 301 and 306 lack those switches. Those transformers 301 and 306 include only a single such normally-on switch. Further, as acknowledged in the Office Action, there are no normally-off current bypass devices for respective transformers in Stoupis.

As a result of these differences between the power converters defined by claims 1 and 4 and Stoupis, it is impossible for Stoupis to isolate respective transformers that may have a fault or may be connected to a fault, while maintaining in service the remaining transformers, as in the invention. For example, it is apparent in Figure 3C of Stoupis that the arrangement provided, including the redundant distribution line

319, ensures that, with the fault arrangement shown, loads 315 and 312 continue to receive power. On the other hand, load 314, which is not connected to any faulty distribution line, is unnecessarily isolated. Accordingly, Stoupis does not stand for the proposition for which it was cited, namely as supplying respective pairs of normally-on switches connected to respective ends of the primary winding of a respective one of the array transformers.

Moreover, as acknowledged in the Office Action, Stoupis cannot provide the bypass functionality of the invention, isolating one array transformer without electrically isolating another array transformer. Applicant strongly disagrees with the Examiner's statement, appearing at page 4 in lines 3-5 of the Office Action, that it would have been obvious to use the "technique of Stoupis to isolate an individual AC-DC converter unit of Akamatsu, if the individual converter has a fault, in order to provide efficient and more robust fault protection." Applicant respectfully disagrees because, as just described in the preceding paragraph, the isolation asserted to be present in Stoupis is not present there, particularly with respect to each of the electrical elements, such as the respective array transformers of the claimed invention. In other words, the hypothetical modification of Akamatsu with Stoupis cannot reasonably suggest the claimed invention because the only similarity between Stoupis and the isolating switches of the invention is a rather vague concept. That vague concept cannot suggest the specific structure as described in independent claims 1 and 4.

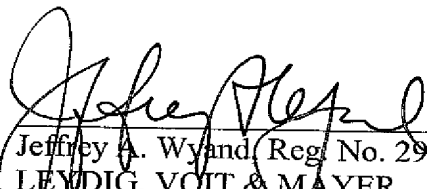
Wilson was cited as describing a circuit bypass device, namely a normally-off switch equivalent "connected in series with a circuit." The language of the independent claims concerning normally-off current bypass devices describes those devices as connected in parallel with corresponding combinations of the primary winding of a corresponding array transformer and its associated pair or normally-on switches. Wilson is directed to a single bypass device connected in parallel with a battery cell. Even assuming Wilson stands for the proposition for which it was cited, and might be used to modify further the hypothetical modification of Akamatsu with

Stoupis as proposed in the Office Action, there would still be numerous elements of the independent claims 1 and 4 missing from the combination of prior art publications. Those missing elements are the respective pairs of normally-on switches provided for each of the primary windings of the plurality of array transformers and the plurality of mutually independent DC circuits.

Although Akamatsu is clearly a more pertinent reference than the previously cited primary reference, Stoupis and Wilson still do not supply the parts of the invention described in the independent claims that are clearly and admittedly missing from Akamatsu. Therefore, even if the hypothetical modifications of Akamatsu with Stoupis and Wilson were made, the invention as defined by the independent claims 1 and 4 could not be produced. As a result, upon reconsideration, claims 1, 3, 4, and 6 should be allowed along with the already allowable dependent claims 2 and 5.

Prompt and favorable action is earnestly solicited.

Respectfully submitted,


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